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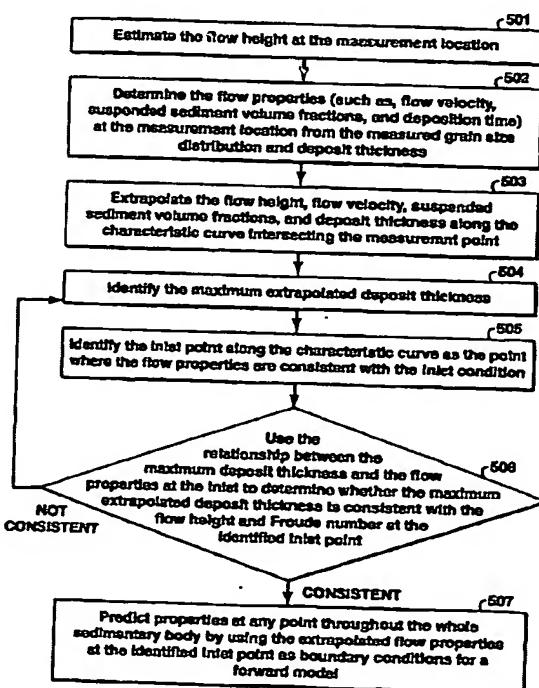
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(54) Title: METHOD TO DETERMINE PROPERTIES OF A SEDIMENTARY BODY FROM THICKNESS AND GRAIN SIZE DISTRIBUTION AT A POINT WITHIN THE BODY



(57) **Abstract:** A method to determine the properties of a water-lain sediment body from a measurement of grain size distribution and deposit thickness at one location in the body is disclosed. In one embodiment, the method comprises (a) determining the flow properties at the measured location, (b) extrapolating the flow properties back to the inlet through which the depositing flow was emitted, (c) determining at least one property of the water-lain sediment throughout the sediment body by modeling the flow properties using the extrapolated flow properties at the inlet from step (b) as a boundary condition. The flow properties associated with the sediment body include flow velocity, suspended sediment volume fractions, deposition time, and flow height. The properties of the water-lain sediments include, in addition to the flow properties associated with deposition of the sediments, the thickness of the sediment body, the size of the body, the shape of the body, and the grain size distribution at each point within the body.

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